



Communicator

November 2013

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QRM

News You Can Lose
and Much More!



The Communicator



**SURREY
AMATEUR RADIO CLUB**

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EDITOR

John Schouten
SARCcommunicator
@outlook.com

WEBMASTER

Hui Yee VE7YXG

VIA THE WEB

www.ve7sar.net

October Monthly Meeting Minutes

October 9, 2013 General Meeting

The meeting was called to order by President John Brodie VA7XB at 1900 hrs and the agenda was approved. Visitors were introduced: Geoff Howard VE7GHH, Shirley Howard VE7SHL and Pam Hamilton VE7PFH.

Financial

Several membership renewals were processed by Scott at the meeting. Members were also reminded that payment of dues is required to facilitate the RAC Insurance renewal. Scott reported on the balance in the savings and chequing accounts, and expenses incurred during the month. Tickets for the Sony Sound Bar are still available and the draw will be held at the Christmas party. SARC and SEPAR each netted a profit of \$418 from the Cruise-in. After the meeting Scott will put the order in for SARC name tags.

John VA7XB advised that the club has applied for a 2014 Surrey Community

Grant, used to offset FD expenses. Last year's grant was \$825 and this year's application is for about \$500.

Repeater

John VA7XB discussed the present state of the repeater at One Park Place. The internal air quality problem has come to a head and Work Safe BC is now involved.

Equipment

Our 2 club trailers will have to be moved from their present location to a new location as the storage site has been sold and is under development. The Quonset hut that acts as the shelter for the trailers is also being moved. The new location will be Hall #11.

No SEPAR report was available.

Communicator

The Exec had discussed making the Communicator available to non-members but decided that the publication should be considered a

CLUB EXECUTIVE 2013-2014

PRESIDENT

John Brodie VA7XB

VICE PRESIDENT

Brett Garrett VE7GM

SECRETARY

Rob Gilchrist VE7CZV
(also Net Manager)

TREASURER

Scott Hawrelak VE7HA

DIRECTORS

John Schouten VE7TI
(Communicator Editor)

George Merchant
VE7QH (Repeaters)

Bill Little VA7ZBL
(Membership)

Bill Gipps VE7XS

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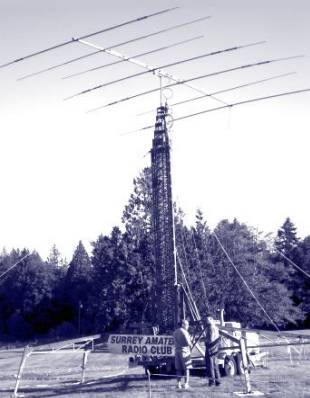
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	SEPARS Net	SARC Net
1 st Tuesday	Drew VA7DRW Jay VE7OFH Standby	Drew VA7DRW
2 nd Tuesday	Dixie VA7DIX Alan VA7BIT Standby	Jinty VA7JMR
3 rd Tuesday	Rob VE7CZV	Anton VE7SSD
4 th Tuesday	Peter VE7PGX Dixie VA7DIX Standby	John VA7XB
5 th Tuesday	Jinty VA7JMR	Elizabeth VE7ELA
Want a turn at Net Control? Contact the SARC Net Manager VE7CZV @ separs.net		

SARC hosts an Amateur Radio net each Tuesday evening at 8 PM. Please tune in to the VE7RSC repeater at 147.360 MHz (+600 KHz) Tone=110.9, also accessible on IRLP node 1736 and Echolink node 496228. On UHF we operate a repeater on 443.775MHz (+5Mhz) Tone=110.9 and EchoLink Node 1737



benefit of membership. In lieu of that, a sample Communicator will be put on the home page for downloading by visitors. It was noted that members are free to forward the Communicator to prospective members and others.

SARC's next meeting in November will feature John White VA7JW as guest speaker. His topic will be "Lightning Protection for Your Shack".

Operator Training

Brett VE7GM referred those present to the article in the Communicator which outlines the Operator Training program for this year.

Net Control

Rob VE7CZV advised that Elizabeth VE7ELA, will handle net control for the fifth Tuesdays when they occur, and will be available as a spare NCS. He reminded the group that more NCSs are needed for the club net.

The after-meeting social gathering will again take place at the local McDonalds on Fraser Highway. Several of those present indicated they plan to attend.

New Business

Al VE7CDC raised for discussion the possibility of having a FreeStar autopatch

system. This was occasioned by the recent total dropout of Rogers cell phone service. Al will talk to ICOM about the feasibility of an AutoPatch capability in connection with VE7ICM.

Presentation

After coffee break, John MacFarlane VE7AXU gave an excellent presentation on "Introduction to Digital Modes for Absolute Beginners".

Christmas Party

Following the presentation, Jinty VA7JMR provided an update on the Christmas party. She indicated that the party will be held on Dec. 7th at the Eaglequest Coyote Creek Golf Club, a location which has several advantages over previous venues. On the program are entertainment and a draw for door prizes, including a handheld radio. Jinty is requesting that members make donations for door prizes and request items from merchants; she provided sample request letters for this purpose. She emphasized that an accurate headcount is required several weeks before the event.

The meeting was adjourned at 2100.

DOWN THE LOG...

SARC Monthly Meetings

2nd Wednesday (Sept-Jun)
1900 hrs local at the Emergency Management BC PREOC,
14275 96th Avenue, Surrey, BC

Weekly Club Breakfast

Friday at 0800 local
ABC Country Restaurant at
600 - 7380 King George Blvd.
Surrey

SARC Net

Tuesday at 2000 hrs local
on 147.360 MHz (+) Tone=110.9

SEPARS Net

Tuesday at 19:30 hrs local
on 147.360 MHz (+) Tone=110.9

Announcements & News

SEPARS Monthly Workshop
Third Thursday, 1900-2130 local
14923-64th Ave, next to Firehall
#9, Surrey.

SEPARS Training

Fourth Saturday, 0830 local,
Firehall #1, 88 & 132nd Street,
Surrey

On the Web

ve7sar.net

Between newsletters, watch your e-mail for announcements of events, monthly meetings and training opportunities. These announcements can also be found on our web page, or via:

Twitter
[@ve7sar](https://twitter.com/ve7sar)

Photos
Web Albums

SARC Christmas Party

Where: Eaglequest Coyote Creek Golf Club,
7778 - 152nd Street, Surrey

When: December 7, 2013 from 11 am until 2 pm

Cost: SARC members and guests: \$30 per person
SEPAR members and guests: \$40 per person.

SARC & SEPAR members and guests are cordially invited to attend.

Come and join us for Caesar salad, Christmas turkey and all the trimmings with Baked Eggnog Cheese Cake & Berry Coulis for Dessert. Vegetarian option available.

Awards and door prizes (including a radio) will be part of the event, as well as entertainment.

RSVP to jinty.reid@gmail.com



Coming Up In November: Evaluation and Application of Inexpensive Lightning Surge Protectors

Presented by John White VE7JW



About 2 years ago at VA7JW, a “program” of major repairs, upgrades and replacement of outdoor infrastructure (antennas, cables, equipment) was undertaken for HF, VHF and UHF systems. As all coaxes, control lines, power wiring to outdoor equipment was being replaced it seemed to be a good time to think about installing surge protection. The question was what to do and how to go about it.

While there are many types of surge suppressors available, there were 11 coaxes, 3 rotor control lines and a multi-wire power cable, all of which would have to be “treated” at a an

affordable cost. A study was undertaken to investigate lower cost surge devices to see if they would be of any use. The talk will be about the products selected, the tests and results obtained, the design of the systems, and their installation.

We hope you can make it for this informative subject.



Beginner's Corner

Another Look At Standing Wave Ratio (SWR)

SWR is used as an efficiency measure for transmission lines, electrical cables that conduct radio frequency signals, used for purposes such as connecting radio transmitters and receivers with their antennas. A problem with transmission lines is that **impedance mismatches** in the cable tend to reflect the radio waves back toward the source end of the cable, preventing all the power from reaching the destination end. SWR measures the relative size of these reflections. An ideal transmission line would have an SWR of 1:1, with all the power reaching the destination and no reflected power. An infinite SWR represents complete reflection, with all the power reflected back down the cable. The SWR of a transmission line can be measured with an instrument called an **SWR meter**, and checking the SWR is a standard part of installing and maintaining transmission lines and antennas.



A typical SWR meter. Note the two meter movements. The scale on the left indicates Forward power to the antenna (in Watts), while the one on the right indicates power Reflected back to the transmitter. With a good match, the latter should be as low as possible. The red radial lines indicate the ratio, read where the needles cross, with 1:1 ideal.



Radio-Active

Jinty Reid VA7JMR

Introducing Ralph Wrotniak VA7UB/VA7CNR

Ralph was born in Edmonton, Alberta to Polish parents. During his school years Ralph attended Saturday morning Polish School, consequently, Ralph is fluent in Polish. He has 2 brothers, one is now deceased and the other lives in Edmonton.

In 1969 when he was 15 years of age the family moved to Surrey BC. Ralph remembers that as the time when Neil Armstrong walked on the moon. He attended the Queen Elizabeth Secondary School where he was in the Science program. He was also captain of the Senior Boys Basketball Team and he continued in this sport when he went on to study at Douglas College. There he took Physical Education with a minor in Geography. After transferring to UBC he obtained his degree in the aforementioned subjects. It was while studying at UBC that he met his future wife Nell who was also at UBC.

While he was at UBC he spent summers working for CNR so it was not surprising that after graduating from

university Ralph changed career direction and went to work for CNR in a managerial position. Ralph worked for CNR for 38 years before taking early retirement. He still does contract work for them as a transportation consultant.



In 1976 he married Nell and later the couple had a son Craig who is now a high school teacher at North Surrey High School with an emphasis on drama. He is presently doing his Masters degree. Ralph and Nell live in Langley and it was there, in answer to an advertisement 5 years ago, that they both became interested in ham radio and took their basic license. Later they both obtained their advanced license. Both of them are excited by ham radio and it has become one of the loves of their lives and an interest that they share equally. They each have their own handheld radio, Ralph's is an iCom, but they share their Kenwood base radio.

Besides ham radio, Ralph and Nell share their hobbies of boating and bar fishing. Ralph enjoys travelling and exploring in Canada and United States but hopes in the future to visit Holland and Britain. He loves to get away into the sun, so Southern California is a favourite destination.

When asked about his strengths, Ralph stated that he has strong work ethics and Nell added that he is kind hearted, flexible and spontaneous but on the humorous side he can sometimes be a little "naughty". Nell and Ralph compliment each other as a married couple and enjoying spending time together.



For Sale

Kenwood D-710A mobile, brand new in box, never used
\$500.00Contact

John Horahan VA7DFA

Call 604-318-4704

Or email: johnhorahan@gmail.com

Wanted

Rob VE7CZV still needs an auto-tuner for his HF rig, specifically for 80m.

If you have or know of one that is available at a good price, please contact Rob via
robgil@telus.net



The Contest Contender

John Brodie VA7XB

The CQ WW SSB Contest



The **CQ WW SSB Contest** was held the weekend of Oct. 26-27. Once again, a huge “thank you” goes out to Fred VE7IO for giving up his weekend, for all his detailed preparation, and use of his station. Not only the more seasoned ops but also a few members new to contesting were provided an opportunity to participate in this great contest.

We used the SARC club call of VE7SAR and the results are posted on the 3830 website. We did quite well with 1,137,120 points for 32 hours of operation. Our best band was 10 meters with 15 a close second, so we are pleased. We were blessed by outstanding conditions for once, including the much-sought but seldom-experienced 10 m band wide open to the world. We made DXCC* on 15m and 84% of DXCC* on 10m.

Those members who took part were: Don VE7GL, Jay VE7KC, John VE7AXU, Keenan VE7XEN, Nelson VE7NAE, Pam VE7PFH, Sean VA7CHX, Stan VA7NF and Walter VE7SM. Mentors were Fred VE7IO, Jim VE7FO and Brett VE7GM. Most QSO's in a ten minute period was 24 by VE7XEN, who also had the most QSO's in one hour with 92. This is a very competent level of performance.

In addition, the Station Manager training presented by Jim VE7FO on Sunday was much appreciated by Fred, Brett and John VA7XB, who have been inspired to master the various propagation, skimmer and reverse beacon software programs to enhance VE7SAR's and individual competitive performance in future.

Top 5 In Countries Worked

- 63 VE7AXU
- 52 VA7NF
- 49 Tie VE7SM & VE7XEN
- 46 VE7NAE

**DXCC, is an amateur radio operating accomplishment earned by making a distant contact, or DX, with 100 or more geographic entities around the world.*



Congratulations to the SARC and SEPAR members in the Contest Group who attained first place for BC in the CQ World Wide WPX Contest: VA7AQ, VA7CHX, VA7JMR, VA7XB, VE7FO, VE7KGK, VE7TI and VE7XEN. Many thanks to Brett VE7GM, the unnamed mentor for the newer operators.

Dates	SARC Contest	Modes
Nov 16-18	ARRL Sweepstakes Contest	SSB
Nov 23-24	CQ Worldwide DX Contest	CW
Dec 28	RAC Winter Contest	SSB & CW
Jan 4-5	ARRL Roundup	RTTY
Jan 18-19	North American QSO Party	SSB
Feb 1-2	BC QSO Party	SSB, RTTY & CW
Feb 8-9	CQ WW WPX Contest	RTTY
Feb 22-23	North American QSO Party	RTTY
Mar 29-30	CQ WW WPX Contest	SSB
May 24-25	CQ WW WPX Contest	CW
June 28-29	ARRL Field Day	

IMPORTANT NOTICE

All members must have paid dues within the next month. If not, this will be your **last Communicator**. We hope you will read this notice and send in your dues ASAP so you don't miss a single edition.

Please pay at the November 9th meeting or send your cheque to our Treasurer:

Scott VE7HA, 13935 80A Ave., Surrey, BC V3W 6P5

Individual dues are \$30 but, if you are also a member of RAC, a \$5 discount applies. The family rate is \$40 (2 or more members in one family), also with the RAC member discount.

SARC Snaps This month... John MacFarlane VA7PX's October Presentation



A copy of John's presentation can be found on SARC's website at URL:
ve7sar.net/events/DigitalHamOperations/DigitalHamOperations.html



SARC Raffle

2.1 Channel 300W Soundbar

\$5 buys one chance; \$12 buys 3 chances

Draw will be held when \$100 worth of tickets have been sold.

Donated by Pat Speer VA7XE

Model - SONY CT 260 Sound Bar System with wireless Subwoofer, manual, digital coaxial cable and remote. Worth about \$300.00. Approx. 6 months old.



On sale at Best Buy for \$299.99 (\$50.00 off the regular price) and at Future Shop for \$349.99

"Bring incredible sound and heart-pounding bass to your living room with the HT-CT260 sound bar. Its wireless subwoofer makes setup a breeze while built-in Bluetooth makes it easy to wirelessly stream music from your smartphone, PC, tablet, music player, or other Bluetooth enabled device. With a Digital Optical cable (included) it easily connects to your HDTV, and its unique design delivers an optimal sound experience without the need to connect multiple speakers throughout the room. A perfect fit 40" or larger HDTVs, this sound bar is also wall mountable or can be placed on a tabletop.

Bring your TV experience to life with exceptional audio marked by rich, natural sound with incredible clarity and definition in a compact, stylish design."



Free Basic Licensing Course

The Emergency Planner for Port Coquitlam is sponsoring a 3 day Basic amateur radio licence course for free. The dates are November 16, 17, and 18.

For registration or for more information contact Tara Stroup, Emergency Program Officer, at (604) 927-5460 or at stroupt@portcoquitlam.ca

If you know of anyone who is considering the acquisition of an amateur radio license please have them sign up with Tara.

~ Ron Casey VE7VTA

The SARC Calendar ...places to be in Surrey for Amateur Radio in the month ahead

November 2013						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
27	28	29	30	31	1	2
For details on all SARC events, go to ve7sar.net For details on all SEPARS events, go to separ.shutterfly.com/calendar					Weekly SARC Breakfast 8:00 ABC Restaurant 74th & King George Blvd.	Contest: ARRL Sweepstakes CW
3	4	5	6	7	8	9
Contest: ARRL Sweepstakes CW Maple Ridge ARC Swap Meet		SEPAR NET 7:30 SARC NET 8:00			Weekly SARC Breakfast 8:00	Contest: WAE DX RTTY
10	11	12	13	14	15	16
Contest: WAE DX RTTY		SEPAR NET 7:30 SARC NET 8:00	SARC General Meeting: Lightning Protection		Weekly SARC Breakfast 8:00	Contest: ARRL Sweepstakes SSB
17	18	19	20	21	22	23
Contest: ARRL Sweepstakes SSB		SEPAR NET 7:30 SARC NET 8:00			Weekly SARC Breakfast 8:00	Contest: CQ WWW DX CW
24	25	26	27	28	29	30
Contest: CQ WWW DX CW		SEPAR NET 7:30 SARC NET 8:00	SARC Exec Meeting		Weekly SARC Breakfast 8:00	

Contest Details: <http://hornucopia.com/contestcal/contestcal.html>



SEPAR Report

The Great BC Shake-Out 2013

Fred Orsetti VE7IO



The Great BC Shake-Out took place on October 17th at 1017 or 10/17 at 1017 as it was known. This was a Thursday and therefore limited to available operators for SEPAR to retired members and those who could be flexible with their work hours.

Looking over the available operators we determined that we could operate two sites, the radio room and the mobile communications trailer. As both these facilities are "turnkey" sites that can be brought on line very quickly. As well both sites have a full range of communications modes, VHF, RMS packet, D-Star and HF so we could take check-ins from around the Province.

The communications trailer is currently at VE7IO's QTH allowing us to connect up an 80 meter dipole at 110ft which proved to be a significant advantage. We also used the 5/160 HiQ mounted on the trailer for 40 meter check-ins which worked well. For VHF we used 147.42 simplex as well as RMS packet and VA7ICM D-Star repeater. The following stats are from the communications trailer.

VHF - 147.42 Simplex 19 check-ins from the Metro area and Vancouver Island.

HF - 80 meters 48 check-ins from around the Province

HF - 40 meters 27 check-ins from around the Province

D-Star VA7ICM 3 check-ins from the Metro area

Total check-ins 97

The radio room took check-ins on VHF, RMS packet and D-Star and did not activate their HF radios. The following stats are from the radio room.

VHF - 146.55 Simplex 14 check-ins from the Metro area and Vancouver Island.

RMS check-ins at both sites were sent in via Winlink and remained on the CMS. These will be evaluated and added to the collective map plot.

These are important numbers as they represent the availability of amateur radio to communicate from a wide range of geographical locations. We specifically asked



SEPAR

Operators

AI VE7CDC

Jay VE7KC Marcy

VE7JT

Peter VE7PGX

Dixie VA7DIX

Garvin VA7YEE

and

Rob VE7CZV

stations checking in to provide their current location so that we can plot the results on a map and this is now being done.

This quick exercise provided an opportunity to look at how we did with regards to handling large amounts of check-ins in a very short time. We did not take or send any messages we just focused on check-ins and their locations. After the exercise a quick review highlighted some areas that need work and this will be a major focus for upcoming training sessions.

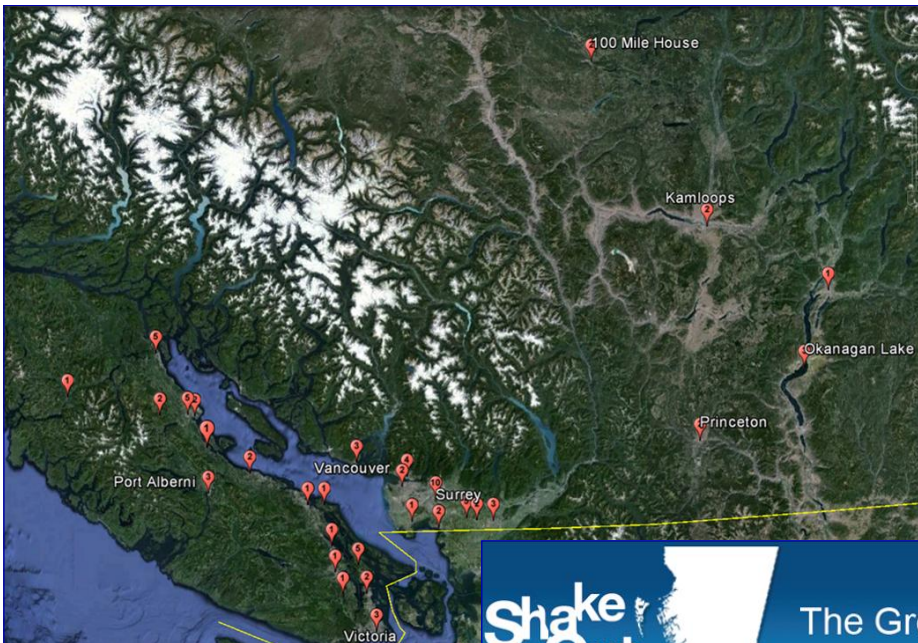
~ Fred VE7IO

SEPAR Meetings

Third Thursday of each month starting at 1900 hrs

Fourth Saturday of each month starting at 0900 hrs

Location and event schedule can be found at separ.shutterfly.com — click on the calendar tab



These are the locations of the check-in completed during the exercise.





QRM

...from the Editor's shack

*Do you have a photo or bit of club news to share?
Something to sell or something you are looking for?
Email it to SARCcommunicator@outlook.com for inclusion in this column.*

The Dumbest Thing I've Ever Done

Give yourself a shock? Let the smoke escape from a circuit component? We've all done some dumb things, whether related to the hobby or not. The SARC Exec is willing to donate a prize for the story of the dumbest thing a member has ever done.

You may submit your entry to President John Brodie, who has been sworn to keep the identity of the contributor a secret. The anonymous stories will be reviewed by your Exec and will be published in a future Communicator.

So... c'mon and don't be shy. Send your blooper to va7xb@rac.ca



Yes, it's our own Bill Little and his wife Bonnie. Isn't that Johnny Depp with them? Are they joining the cast of Pirates of the Caribbean?

No, Bill and his wife recently took a cruise down south. We understand Bill took his handheld, Perhaps he'll share some experiences at a future meeting.

Achievement Awards

Every year about this time, we ask our members to name their personal choice for our "Amateur of the Year" Award, to be presented at our annual Christmas Party.

So please give some thought to this and send your recommendations to va7xb@rac.ca. In doing so, you should include a few brief words that describe the how the individual stands out from the crowd in offering service to the club, the community or to amateur radio in general, i.e. why he or she is deserving of special recognition.

Maple Ridge Amateur Radio Club

The Fraser Valley's Largest Ham Radio,
Computer and Electronic Equipment



SWAP MEET

and

PANCAKE AND SAUSAGE BREAKFAST

8:00-9:00 AM

Hot Dogs, coffee, pop, and donuts available

Admission \$4.00

Sunday Nov 3, 2013

9:00 AM - 1:00 PM

Heritage Hall

12460 Harris Road

Pitt Meadows, BC

Talk-In: 146.800 (- 600) Tone 156.7Hz

Sellers: \$20.00/table includes 1 admission

Table reservations

Nick: VE7TE, 604-465-9476

email: ve7te@mrarc.net

Open to sellers at 7:30 AM

Up to 40 tables with Com-West, ICOM Canada, QSL Bureau, Wouxun Canada, and Radio Amateurs of Canada on site

Lots of room, Great Prices, Free Parking

Door Prize: Icom IC V80 hand held radio

Raffle Prize: Icom IC 2300 2M FM mobile transceiver

Non-hams will receive cash equivalent for radio prizes

50/50 Draw plus many other prizes

For more information check out mrarc.net

Portableapps.com is an exciting website for geeks on the go. Some of the best open source apps for Windows have been shrunk and encapsulated to work on your portable flash drive. Everything from file managers to VLC (with DVD and DIVX codecs) are available for free. If you're like me, your workplace doesn't like people installing outside software on company machines, but with the software from Portable Apps, you can install the software on a thumb drive, plug into any Windows computer, and your settings will save to a file on the thumb drive, not to the Windows registry. Great for travelers using public computers.



Page 13—News You Can Lose

The Lighter Side of Amateur Radio

The following is an actual letter. The original was typewritten, and all spelling and grammar has been carefully left intact, including errors.

To Mr. (name omitted)
District Manager for Alabama Radio Shack
3300 N. Pace Blvd
Pensacola, FL. 32505

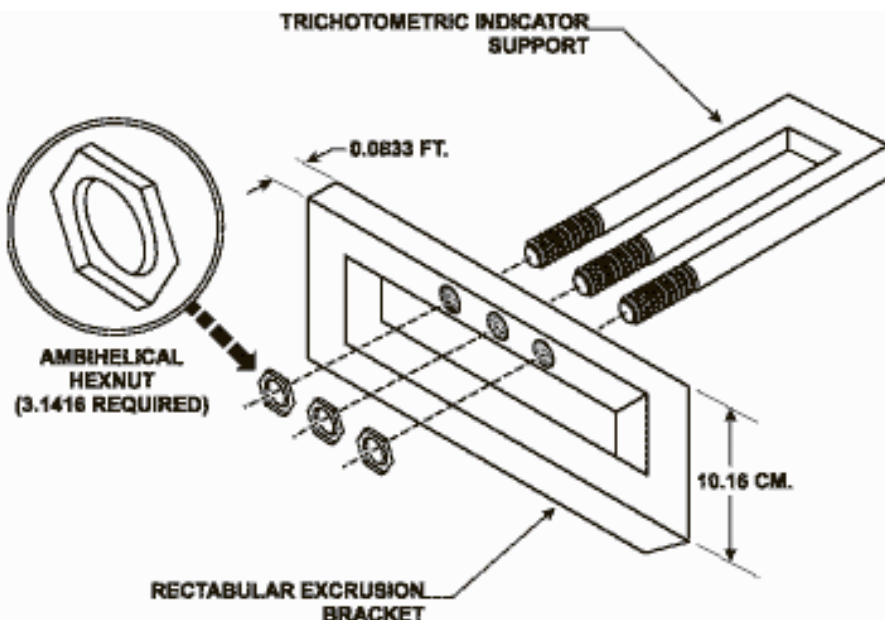
Dear Sire,

This letter is complain about the problems I have having with the ham radio model number 19-1101 I had got from your company Radio Shack. I had this shipped special to me from your store 1096 Eastdale Mall, Montgomery, Alabama. I was got this because I think that i would get transmitt further that I did with the TRC 217 40 channel walkie talkie.

The problem that I had first was when I was going to hook this radio HTX-1000 to the antenna the conektor on the radio was wrong it wouldn't attach to my cable. I was able to hook it finally by making a small change in the connektor. As soon as I tried to use it there was no sound coming at all. This happened for two days and I never did get to talk to anybody the whole two days. That day the cable company came knocking my door and said there was something causing problems at my house and disconnected my radio from the cable line. you knew when I brought the Radio that I was going to use that for my antenne. You didn't tell me not to why not?

What I would like for you Radio Shack to do is refund my money because I don't have the radio anymore and its not my fault i dont and I think you should give me back my money. Also the cable company here says that I hurt something in there line and want to be paid fix it. It will cost \$27482.98 to fix the equipment they say was damaged because you didn't tell me not to hook it to the cable. Please remit to me the check for \$27758.53 for damages due. To save this matter from going to court the check must be in my hand by June first or I will turn this over to my attorneys of law.

Thank you
name withheld



Wanted

One of our members needs one of the above for an antenna project.

If you have or know of one that is available at a good price, please contact the Editor at SARCcommunicator@outlook.com



Obsessive Compulsive Ham Disorder



Tech Talk

John Schouten VE7TI

Why Not Try APRS—Cheap!

What is APRS Again?

Automatic Packet Reporting System (APRS) was developed in the late 1980s by Bob Bruninga, callsign WB4APR, a senior research engineer at the United States Naval Academy. He still maintains the main APRS website. The acronym "APRS" was derived from his callsign.

APRS is an amateur radio-based system, since adopted by commerce, for real-time digital communications of information of immediate value in the local area. In addition, all such data is fed into the APRS Internet System (APRS-IS) such as www.openaprs.net and distributed globally for immediate access. Along with messages, alerts, announcements and bulletins, the most visible aspect of APRS is its **map display**. We use it frequently while travelling to keep family informed instantly of our whereabouts, as they can monitor our progress via a map on the Internet. They can even share what we see using Google Street View. You can search for stations by individual callsign, wildcard characters (*), grid square, coordinates and more.

Anyone may place any object or information on his or her map, and it is distributed to all maps of all users in the local RF network or monitoring the area via the Internet. Any station, radio or object that has an attached GPS is automatically tracked. Other prominent map features are weather stations, alerts and objects and other map-

related amateur radio volunteer activities including Search and Rescue and signal direction finding. In emergency planning, we used it extensively for mapping EOC components, tracking the lead runner in the Vancouver International Marathon, bicycle ambulance crews in the Celebration of Lights, and other public events and resources. It has many Search & Rescue and other emergency preparedness uses for tracking.

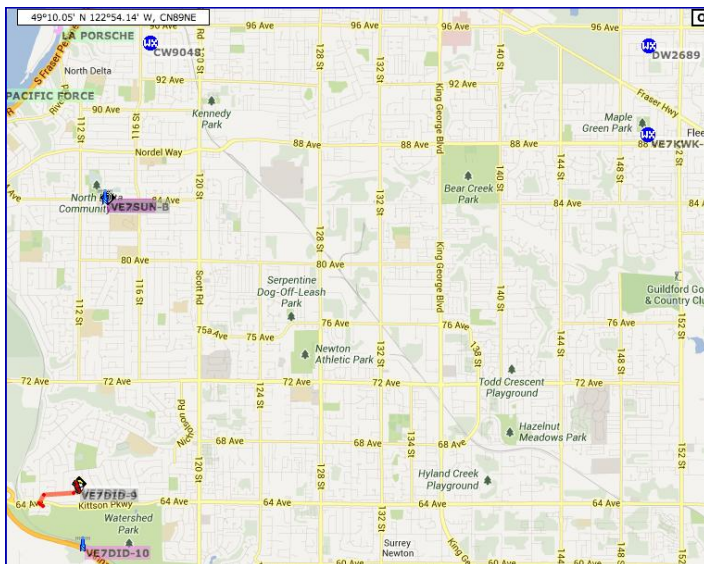
The Technical Stuff

APRS (Automatic Packet Reporting System), is a digital communications protocol for exchanging information among a large number of stations covering a large area. As a multi-user data network, it is quite different from conventional **packet radio**. Rather than using connected data streams where stations connect to each other and packets are acknowledged and retransmitted if lost, APRS operates entirely in an unconnected broadcast fashion, using **AX.25** protocol. APRS packets are transmitted for all other stations to hear and use. Packet repeaters, called digipeaters, form the backbone of the APRS system, and use **store and forward** technology to retransmit packets.

All stations operate on the same radio channel (on 2 meter VHF it is 144.390 MHz), and packets move through the network from digipeater to digipeater, propagating outward from their point of origin. Tune your transceiver to that frequency and you'll hear the packets as short bursts of RF. All stations within radio range of each digipeater receive the packet. At each digipeater, the packet path is changed. The packet will only be repeated through a certain number of digipeaters -or hops- depending upon the all important "PATH" setting.

Digipeaters keep track of the packets they forward for a period of time, thus preventing duplicate packets from being retransmitted. This keeps packets from circulating in endless loops inside the ad-hoc network. Eventually most packets are heard by an APRS Internet Gateway, called an IGate, and the packets are routed on to the Internet APRS backbone (where duplicate packets heard by other IGates are discarded) for display or analysis by other users connected to an APRS-IS server, or on a website designed for the purpose.

While it would seem that using unconnected and unnumbered packets without acknowledgment and



retransmission on a shared and sometimes congested channel would result in poor reliability due to a packet being lost, this is not the case due to the fact that the packets are transmitted (broadcast) to everyone, and multiplied many times over by each digipeater. This means that all digipeaters and stations in range get a copy, and then proceed to broadcast it to all other digipeaters and stations within their range. The end result is that packets are multiplied more than they are lost. Therefore, packets can sometimes be heard some distance from the originating station. Packets can be digipeated tens of kilometers or even hundreds of kilometers depending on the height and range of the digipeaters in the area.

When a packet is transmitted, it is duplicated many times as it radiates out, taking all available paths simultaneously, until the number of "hops" allowed by the path setting is consumed.

Equipment

Conventional packet radio involved a transceiver, a packet modem device and a GPS receiver, plus all the connecting hardware. Older transceivers were often used and the requirements are minimal, and involve a single frequency.

With the advent of smaller devices, especially smart phones, more features can be accessed in a more user-friendly manner and the operation has become less complex. As a matter of fact, if you have a smart phone with a GPS receiver and an Internet connection, the radio and modem are entirely unnecessary.

Still, we are radio amateurs so we like to use a radio and be independent of commercial infrastructure such as ISP data plans – most hams I know are 'frugal'. So, what follows is an inexpensive way to be active on APRS.

What Do I Need?

- Voice-activated (VOX) capable transmitter (Baofeng Handheld or equivalent ~ \$50)
- APRSdroid App (Google Play Store \$4.95) As far as I know, the iOS, Blackberry and Windows phone systems have no equivalent app capable of being connected to a transceiver—as yet. Lots of Internet connected APRS apps though, the best being OpenAPRS for iOS.
- Android device (tablet, computer or smart-phone) with GPS capability and an earphone jack.
- 3.5mm audio cable

The Software

APRSdroid is an Android application for Amateur Radio operators. It allows reporting your position to the [APRS \(Automatic Packet Reporting System\)](http://www.openaprs.net) network, displaying of nearby amateur radio stations and the exchange of APRS messages.

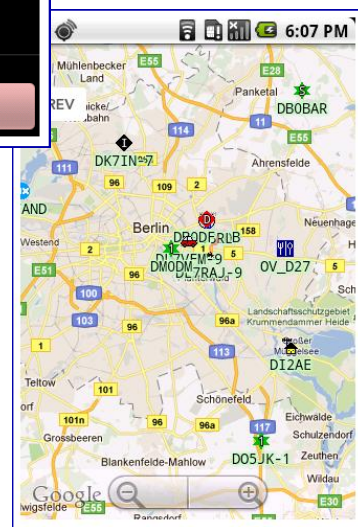
APRSdroid is an Android APRS application capable of encoding and decoding AFSK for portable APRS operations. While it supports APRS-IS (Internet based APRS), the

developer really wanted a solution that would allow for bidirectional APRS communications in the field without being dependent on an Internet connection. He also wanted a rich user interface with offline maps and the ability to EASILY send and receive messages over APRS.



His solution is APRSdroid, which can be configured to communicate via the Internet (APRS-IS), Bluetooth (requires an external TNC with bluetooth to serial connectivity), or audio input/output.

In the spirit of KISS, he really didn't want to mess with any intermediate devices to facilitate keying the transmitter, so a VOX capable HT is used to key the transmitter when audio is detected. This keeps the solution very clean and simple. Two independently powered devices connected with a single passive audio cable.



So I connect my android device to the Baofeng handheld with a simple audio cable from the earphone jack to the mic input of the radio. I set the radio to VOX and, when the APRSdroid software beacons my location (at a preset interval), it keys the radio which transmits my position, speed, direction and any message I care to add, simply and inexpensively.

Have a look at the excellent website at www.openaprs.net, it allows you to configure friends lists, map permanent or temporary stations and much more.



RAC News

Radio Amateurs of Canada

RAC Bulletin - RAC Member Recognition Program (RAC MRP)

In an effort to properly recognize our valued volunteers, a committee has been struck to manage the RAC MRP. We recognize that many of you have given tirelessly of your time on our behalf for many years, and it's time that we "put you on a pedestal" and say thank you.

Individual Award

Any full member of RAC is eligible to nominate a fellow member for a MRP award. All you need is to provide a short essay on why you think that your candidate is deserving. Send it along to one of committee members listed below.

Extraordinary Award

You may know of an individual or group that has gone above and beyond the call of duty. These folks will be recognized in a special way.

Committee members

- Jeffrey Stewart VA3WXM
va3wxm@sympatico.ca
- Doug Mercer VO1DM vo1dtm@rac.ca
- Normand Pitre VE2NHK
ve2nhk@rac.ca

RAC Bulletin - RAC Director Ontario South

Congratulations are extended to Mr. Rod Hardman, VE3RHF who was recently acclaimed as the RAC Director for Ontario South. His term as Director will be for the two years starting January 1, 2014 and ending December 31, 2015.

There are more Amateurs in Canada than ever. There is a growing "incidental use" category: people who use Amateur Radio to track balloons or use high frequency links in a home-grown computer network or who sail and want to have a backup communication system. Is there a potential link to the Maker phenomenon that is spreading across North America? How can we reach out to clubs that have an ethnic focus? One of the fastest growing demographics is aboriginals: how many first nations have repeaters?

RAC President's
Newsletter

Do You Remember?

1965 Radio Shack Catalog

Roam the World Via Shortwave!

Hallicrafters Model S-120 4-Band Receiver
69⁹⁵ \$10 monthly

First Choice of novice hams and shorewave listeners. Tunes 3 SW bands from 1600 kc to 30 mc, regular AM radio from 550 to 1600 kc! With electrical bandspread, B.F.O./selectivity control, built-in speaker, headphone jack, 4 tubes, 1 rectifier, 13½ x 6 x 8¼". 20K805X, Sh. wt. 2 lbs. ... \$10 Mo., Net 69.95

3 Shortwave Bands Plus Standard AM Broadcast Band!

HT-40 Transmitter Kit
89⁹⁵ Kit \$10 Mo.

Excellent CW/AM transmitter, top performance! Full band switching, 80 through 6 meters. TVI filtered, crystal controlled, Pi-network output. Dual range meter for tuning and output adjustments, built-in modulator. Max. power input: 75 watts; power output 35 watts CW, 30 watts peak AM. Provisions for external V.F.O. 117 VAC, 50/60 cy, 13½ x 8¼ x 6½". 20KK806X Kit, 19 lbs. \$10 Mo., 89.95 20KK802X, Wired, 19 lbs. \$15 Mo., 109.95

Hallicrafters 5-Band Receiver
99⁹⁵ \$10 Mo.

• Tunes 185 KC to 31 MC!
• Extended Low-Freq. Reception!

The Hallicrafters S-118 provides coverage of aircraft, mobile, marine and distant frequencies as well as standard broadcast, amateur and international shorewave bands. Automatic noise limiter, electrical bandspread, phono input/audio output jack, B.F.O., 2 I.F. stages, built-in speaker and headphone jack. Use 5 tubes, 2 silicon diodes, 117 VAC, 60 cy. 20K799X, 14½ x 6 x 8½", Ship. wt. 19 lbs. Net 99.95

SWR And Field Strength Meter
12⁹⁵

Measures SWR Forward and Reflected Power Up to 1KW Reads Field Strength

Checks SWR measurements for both amateur and CB transmitters. SWR 1:1 to 1:10, accuracy ±5% 2-30 MCS. Impedance 52 Ω. Five-section collapsible antenna, 2" 100µs sensitive meter movement for checking both SWR and field strength. Can be left continuously in the circuit for monitoring transmitter outputs. Determines comparative field strengths. Impedance matches 52 Ω coaxial line. With instructions. Size: 6 x 2 x 2½". 20K013, Ship. wt. 1 lb. Net 12.95

Transmitting and Practice Key Values

SKILLMAN SPEED-MASTER BUG. Provides 8 separate tension and speed adjustments. Plastic cover. 20K1014, Ship. wt. 5½ lbs. ... Net 9.95

SKILLMAN HIGH SPEED KEY. Brass key action is fully adjustable. With silver contacts and circuit switch. An unbelievable value at this price! 20K1084, Ship. wt. 1½ lbs. ... Net 1.95

CODE PRACTICE BUZZER. Runs on 1½V battery. Clear, steady signal. 20K1086, Ship. wt. ½ lb. ... Net .79

CODE PRACTICE SET. Key, buzzer. 20K1085, Ship. wt. ¼ lb. ... Net .69

CODE PRACTICE SET. Key, buzzer. 20K1087, Ship. wt. 1½ lbs. Net 1.79

23K466, Battery for Above .. Net .15

Transistorized Code Oscillator
98^c

• Matchbook Size!
• Fully Wired!
• Clear, Crisp Tone!

Connects quickly to telegraph key, 1½ volt battery and FM speaker. Ideal receive/send practice, with excellent CW tone, incl. instructions. 20K1155, Ship. wt. ¼ lb. Net .98

International Morse Code Record Course
37⁵

• Up To 15 Words Per Minute!
• 10 Lessons!
• One 12" LP

Full course of 10 lessons on a single, non-breakable 33-1/3 record. Recorded with code sound. Speed progresses steadily. With instructions. 20K010, Wt. 1 lb. Net 3.75

Code Practice Oscillator
8⁹⁵ KIT

• Learn Morse Code Easily!

Excellent for group or individual use. Separate pitch, tone, light controls; built-in speaker; phone jack. Produces clean, loud signal. Tone frequency range 500-2000 cps, continuously variable. With battery. Size: 6½ x 3¼ x 2½". 20K644, Kit, 2 1/2 lbs. Net 8.95 20K647, Wired, Wt. 2 lbs. Net 12.95

Grid-Dip Meter Kit
29⁹⁵

• True One-Hand Operation!
• Includes All Coils For Frequency 400Kc-250 Mcs

This versatile instrument covers all broadcast, FM, "ham", TV bands. Precision 500-microampere meter movement. Functions as a grid dip oscillator, absorption wave meter and oscillating detector. Use 6AF4A tube powered by transformer operated selenium rectifier. 117 VAC, 60 cy. 20K644, 2½ x 2½ x 7", 4 lbs., Net 29.95

80 Now There Are 36 COMPANY-OWNED Radio Shack Electronic Shopping Centers



More Ham News

Stick your antenna in the ground?

A groundbreaking new Irish technology, said to be the greatest breakthrough in agriculture since the plow is set to change the face of modern farming forever.

The technology, radio wave energized water, apparently increases the output of vegetables and fruits by up to 30 per cent.

Not only are the plants much bigger but they are largely disease-resistant, meaning huge savings in expensive fertilizers and harmful pesticides.

Extensively tested in Ireland and several other countries, the inexpensive water treatment technology is now being rolled out across the world. The technology makes genetic modification obsolete and also addresses the whole global warming fear that there is too much carbon dioxide in the

air, by simply converting excess CO₂ into edible plant mass.

Developed by Professor Austin Darragh and Dr JJ Leahy of Limerick University's Department of Chemistry and Environmental Science, the hardy eco-friendly technology uses nothing but the natural elements of sunlight, water, carbon dioxide in the air and the minerals in the soil.

The compact biscuit-tin-sized technology, which is called Vi-Aqua - meaning 'life water', converts 24 volts of electricity into a radio signal, which charges up the water via an antenna. Once the device is attached to a hose, thousands of gallons of water can be charged up in less than 10 minutes at a cost of pennies.

~ Submitted by Susan Eshelman VE7IIE

Mark your calendar... SARC Christmas Party

This year our event is going to be at the Surrey Eaglequest Golf Club in the West Room on the **upper/main floor**. Eaglequest requires us to pay in advance according to their policy, so a substantial deposit has been paid already with the final bill to be paid the week before the event. Final numbers have to be in a **week before the party**. Consequently, this means we need you to purchase your Christmas lunch early and confirm you are coming. I know Christmas seems a long way yet but in terms of organizing it is coming up fast.

You can pay at the November SARC meeting if you know you are going. **Numbers submitted to Eaglequest** are firm and have to be paid for regardless. To avoid extra charges there will not be a bar set up in our room but members can go to the Creekside Restaurant bar, one floor down, and purchase their own drinks.

I have arranged for some entertainment. If members wish to see the main floor show they need to be at Eaglequest by 11:30 to 11.45 am as that entertainer is on a deadline and has to perform early in order to catch the ferry to Victoria on time. Lunch will be immediately after the show.

You will notice that the cost is a little higher but considering the venue this is not surprising and even with these costs, SARC members' tickets are being subsidized by the club. I hope you will enjoy the new venue and come prepared to have a good time. Eaglequest have a good reputation for putting on good food.

You might want to check with Bill Little that he has your email so you can be assured of not missing out on communications.

One final thing, as in previous years I need members to get donations for the door prize table in addition to the ones I will be purchasing. I will have donation request letters and thank you letters available for you at the November meeting, and I can also take your donations at that meeting.

Please RSVP me if you are planning on coming to the Christmas party and if you have donations to: jinty.reid@gmail.com

~ Jinty Reid, VA7JMR



QRT...

John Brodie VA7XB

The Repeater Chronicles

You have heard much over the last year about some troubling issues at SARC's repeater site located in the boiler room above the 36th floor of the Concord Pacific tower. SARC is, in effect, a sub-tenant of the City of Surrey, which has generously allowed our equipment to share their space at Concord at no cost to SARC. However, this relationship means we have had no direct means of having our concerns addressed.

The repeater equipment now in use was bought and paid for by way of a Lottery Grant in 2011. Immediately after the equipment was installed in June 2012, excessive temperature and humidity were observed in the boiler room by our technical team during installation and servicing of the equipment. Soon thereafter, signs of corrosion began to show up on the equipment and the cable connectors. Steve Coleman VE7MAN and Dave Cameron VE7LTD, in investigating further, discovered that boiler combustion gases were, at times, spilling into the room as a result of some design deficiencies in the boiler makeup air and HVAC system. These design faults had three important consequences: the boiler was being starved for combustion air, the boiler off-gases were not venting properly, and the combustion off-gases were entering the building make-up air via the building HVAC intakes. More troubling even than the corrosion of our equipment was now the likelihood that carbon monoxide (CO) and other toxic and corrosive trace gases were likely present, with an obvious concern over human health and safety. Our sponsors at the City of Surrey and the building management were notified of these concerns as soon as soon as we understood their cause, however not much happened for several months.

In the meantime, repeater users began reporting technical problems: one such instance was the repeater locking in transmit mode when activated via IRLP or Echolink; another was noise being heard over the repeater output when the repeater was turned on by weak input signals; yet another was the dropout and distortion of Echolink signals coming in via the VHF repeater. Work-around solutions were implemented by our technical team for all these issues, though whether or not they prove to be permanent fixes remains to be seen. The root cause of all malfunctions is believed to be corrosion. During the diagnosis of and remedy of these problems, a number of trips to the repeater site were necessitating by our team. In the Spring of 2013, BC WARN functionality was added to the installation, providing radio links to the Internet.

As an interim solution to the ventilation issues, a few months ago, the building management installed additional vents in the doors leading to the roof of the building, thereby allowing higher volumes of fresh air to enter the room. The

improvement was significant and, although the instances of poor air quality were fewer, they were not eliminated. Our advice to the building management was to leave the exterior door jammed open to increase the access to outside air. This advice was heeded until late September when George VE7QH, SARC's Director in charge of the repeater, made a visit to the site and found the door closed and locked. The internal atmosphere in the room during his visit was hot and humid, indicating that boiler off-gases were once again present. This development raised the concern to a new level as it was apparent that our cautions were being dismissed.

In early October I borrowed a personal carbon monoxide (CO) monitor from John Mackay VE7EEX, and visited the repeater site during a time I expected the boilers to be working hard. Before I was even off the elevator, the CO monitor went into alarm. As I proceeded to the repeater room, gas concentration increased to a level "Immediately Dangerous to Life and Health (IDLH)". I promptly left, advised the building management that no persons should enter the room for any reason, and reported the conditions to WorkSafe BC. I met with the WorkSafe BC inspector, who accompanied me to the site and set up more sophisticated monitoring equipment including a datalogger to record temperature, humidity and CO levels overnight. Since his instrument confirmed the high gas concentrations that I had reported, he took immediate action to block open the exterior door to the boiler room. Immediately thereafter, four separate agencies were conducting their own investigations and issuing orders left and right: Surrey Fire, WorkSafe BC, Fortis Gas and the BC Safety Authority. Since then, a simple but permanent fix has been made to the boiler and HVAC make-up air intakes, and the situation is believed by all to be corrected. Further, a CO monitor and alarm have been installed in the boiler room. We have been advised that since these steps were taken, the internal atmosphere has been acceptable.

Yet, this is not quite over. While the corrective action was being taken, the building manager's HVAC consultant advised me that corrosive (and toxic) gases may still occasionally be present in the boiler room when the boiler fires up and during the few minutes it takes to establish a draft for the exhaust gases to vent, i.e. corrosive conditions have not been totally eliminated. So we must consider what should be done to further isolate our equipment from boiler exhaust gases. We will be meeting with our sponsors at the City of Surrey to discuss what can be done and next month's report will discuss the options that are being considered.

~ John VA7XB